Exploring Aeronautics			
2006 Science			
Learning Standards			
District of Columbia Science			
Grade 5			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	DC	SCI.5.9.2	Demonstrate that if the forces acting on an object are balanced so that the net force is zero, the object will remain at rest if it is initially at rest or will maintain a constant speed and direction if it is initially moving.
Fundamentals of Aeronautics (145-176)	DC	SCI.5.9.3	Describe that unbalanced forces cause changes in the speed and/or direction of motion of an object (acceleration).
Fundamentals of Aeronautics (145-176)	DC	SCI.5.9.5	Describe that the greater the net force, F, applied to a body, the greater its acceleration, a. Describe that the greater the mass, m, of an object, the smaller the acceleration produced by a given force.
How an Airplane Flies	DC	SCI.5.9.2	Demonstrate that if the forces acting on an object are balanced so that the net force is zero, the object will remain at rest if it is initially at rest or will maintain a constant speed and direction if it is initially moving.
How an Airplane Flies	DC	SCI.5.9.3	Describe that unbalanced forces cause changes in the speed and/or direction of motion of an object (acceleration).
How an Airplane Flies	DC	SCI.5.9.5	Describe that the greater the net force, F, applied to a body, the greater its acceleration, a. Describe that the greater the mass, m, of an object, the smaller the acceleration produced by a given force.
The Activity Center	DC	SCI.5.9.2	Demonstrate that if the forces acting on an object are balanced so that the net force is zero, the object will remain at rest if it is initially at rest or will maintain a constant speed and direction if it is initially moving.
The Activity Center	DC	SCI.5.9.3	Describe that unbalanced forces cause changes in the speed and/or direction of motion of an object (acceleration).
Science of Flight	DC	SCI.5.2.1	Recognize and describe how results of similar scientific investigations may turn out differently because of inconsistencies in methods, materials, and observations, or because of limitations of the precision of the instruments used.
Science of Flight	DC	SCI.5.9.2	Demonstrate that if the forces acting on an object are balanced so that the net force is zero, the object will remain at rest if it is initially at rest or will maintain a constant speed and direction if it is initially moving.

Science of Flight	DC	SCI.5.9.3	Describe that unbalanced forces cause changes in the speed and/or direction of motion of an object (acceleration).
Science of Flight	DC	SCI.5.9.5	Describe that the greater the net force, F, applied to a body, the greater its acceleration, a. Describe that the greater the mass, m, of an object, the smaller the acceleration produced by a given force.
Integrating with Aeronautics	DC	SCI.5.9.2	Demonstrate that if the forces acting on an object are balanced so that the net force is zero, the object will remain at rest if it is initially at rest or will maintain a constant speed and direction if it is initially moving.
Integrating with Aeronautics	DC	SCI.5.9.3	Describe that unbalanced forces cause changes in the speed and/or direction of motion of an object (acceleration).
Integrating with Aeronautics	DC	SCI.5.9.5	Describe that the greater the net force, F, applied to a body, the greater its acceleration, a. Describe that the greater the mass, m, of an object, the smaller the acceleration produced by a given force.
Scientific Method(124-144)	DC	SCI.5.1.3	Realize and explain why predictions may be more accurate if they are based on large collections of similar events for statistical accuracy.
Scientific Method(124-144)	DC	SCI.5.2.1	Recognize and describe how results of similar scientific investigations may turn out differently because of inconsistencies in methods, materials, and observations, or because of limitations of the precision of the instruments used.
Scientific Method(124-144)	DC	SCI.5.2.6	Explain the distortion inherent in using only a portion of the data collected to describe the whole. Understand that it is sometimes acceptable to discard data.
Exploring Aeronautics			
2006 Science			
Learning Standards			
District of Columbia Science			
Grade 6			
Activity/Lesson	**State**	**Standards**	
Tools of Aeronautics(257-326)	DC	SCI.6.2.1	Explain that computers have become valuable in science because they speed up and extend people's ability to collect, store, compile, and analyze data; prepare research reports; and share data and ideas with investigators all over the world.

The Tools of Aeronautics	DC	SCI.6.2.1	Explain that computers have become valuable in science because they speed up and extend people's ability to collect, store, compile, and analyze data; prepare research reports; and share data and ideas with investigators all over the world.
Science of Flight	DC	SCI.6.1.4	Recognize and explain that hypotheses are valuable even if they turn out not to be true, but that many investigations are not hypothesis driven.
Science of Flight	DC	SCI.6.1.7	Draw conclusions based on scientific evidence, and indicate whether further information is needed to support a specific conclusion or to discriminate among several possible conclusions.
Science of Flight	DC	SCI.6.2.1	Explain that computers have become valuable in science because they speed up and extend people's ability to collect, store, compile, and analyze data; prepare research reports; and share data and ideas with investigators all over the world.
Science of Flight	DC	SCI.6.2.2	Explain that technology is essential to science for such purposes as measurement, data collection, graphing and storage, computation, communication and assessment of information, and access to outer space and other remote locations.
Integrating with Aeronautics	DC	SCI.6.2.2	Explain that technology is essential to science for such purposes as measurement, data collection, graphing and storage, computation, communication and assessment of information, and access to outer space and other remote locations.
Scientific Method(124-144)	DC	SCI.6.1.4	Recognize and explain that hypotheses are valuable even if they turn out not to be true, but that many investigations are not hypothesis driven.
Scientific Method(124-144)	DC	SCI.6.1.5	Write a report of an investigation that includes the problem to be solved, the methods employed, the tests conducted, the data collected or evidence examined, and the conclusions drawn.
Scientific Method(124-144)	DC	SCI.6.1.7	Draw conclusions based on scientific evidence, and indicate whether further information is needed to support a specific conclusion or to discriminate among several possible conclusions.
Exploring Aeronautics			
2006 Science			
Learning Standards			
District of Columbia Science			
Grade 7			

Activity/Lesson	State	Standards	
Science of Flight	DC	SCI.7.1.4	Recognize testable hypotheses in investigations that pertain to the content under study, and write instructions that others can follow in carrying out the investigation.
Scientific Method(124-144)	DC	SCI.7.1.1	Explain that when similar investigations give different results, further studies may help to show whether the differences are significant.
Scientific Method(124-144)	DC	SCI.7.1.2	Explain why it is important in science to keep honest, clear, and accurate records.
Scientific Method(124-144)	DC	SCI.7.1.4	Recognize testable hypotheses in investigations that pertain to the content under study, and write instructions that others can follow in carrying out the investigation.
Scientific Method(124-144)	DC	SCI.7.1.6	Incorporate circle charts, bar and line graphs, diagrams, scatter plots, and symbols into writing, such as lab or research reports, to serve as visual displays of evidence for claims and/or conclusions.
Exploring Aeronautics			
2006 Science			
Learning Standards			
District of Columbia Science			
Grade 8			
Activity/Lesson	**State**	**Standards**	
Fundamentals of Aeronautics (145-176)	DC	SCI.8.11.1	Recognize that a force has both magnitude and direction.
Fundamentals of Aeronautics (145-176)	DC	SCI.8.11.2	Observe and explain that when the forces on a object are balanced (equal and opposite forces that add up to zero), the motion of the object does not change.
Fundamentals of Aeronautics (145-176)	DC	SCI.8.11.3	Explain why an unbalanced force acting on an object changes the object's speed or direction of motion or both.
How an Airplane Flies	DC	SCI.8.11.2	Observe and explain that when the forces on a object are balanced (equal and opposite forces that add up to zero), the motion of the object does not change.
How an Airplane Flies	DC	SCI.8.11.3	Explain why an unbalanced force acting on an object changes the object's speed or direction of motion or both.
Science of Flight	DC	SCI.8.1.2	Test hypotheses that pertain to the content under study.

Science of Flight	DC	SCI.8.1.4	Identify and criticize the reasoning in arguments in which fact and opinion are intermingled or the conclusions do not follow logically from the evidence given, an analogy is not apt, no mention is made of whether the control group is very much like the experimental group, or all members of a group are implied to have nearly identical characteristics that differ from those of other groups.
Science of Flight	DC	SCI.8.2.1	Describe how if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be attributable to a change in any single variable.
Science of Flight	DC	SCI.8.9.3	Explain how electrical circuits provide a means of transferring electrical energy from sources such as generators to devices in which heat, light, sound, and chemical changes are produced.
Integrating with Aeronautics	DC	SCI.8.2.3	Use tables, charts, and graphs in making arguments and claims in presentations about lab work.
Scientific Method(124-144)	DC	SCI.8.1.2	Test hypotheses that pertain to the content under study.
Scientific Method(124-144)	DC	SCI.8.1.4	Identify and criticize the reasoning in arguments in which fact and opinion are intermingled or the conclusions do not follow logically from the evidence given, an analogy is not apt, no mention is made of whether the control group is very much like the experimental group, or all members of a group are implied to have nearly identical characteristics that differ from those of other groups.
Scientific Method(124-144)	DC	SCI.8.2.1	Describe how if more than one variable changes at the same time in an experiment, the outcome of the experiment may not be attributable to a change in any single variable.
Scientific Method(124-144)	DC	SCI.8.2.5	Explain why arguments may be invalid if based on very small samples of data, biased samples, or experiments in which there was no control sample.